



Book reviews

Municipal wastewater treatment: evaluating improvements in national water quality

Andrew Stoddard, Jon B. Harcum, Jonathan T. Simpson, James R. Pagenkopf, Robert K. Bastian, Wiley, New York, NY, ISBN: 0-471-24360-42002, 672 pp., US\$ 125.00

Following passage of the landmark US Clean Water Act (CWA) in 1972, the nation dramatically increased its support for Publicly Owned Treatment Works (POTWs). From 1970 to 1999, US\$ 77.2 billion was expended through the USEPA's Construction Grants and Clean Water State Revolving Fund. These expenditures were in addition to larger amounts spent by state and local governments. To date, however, no study has been reported on the impact of these expenditures. This book satisfies that need. Succinctly, the answer to the question, "Was it all worthwhile?" is a resounding, "Yes".

In this book, the authors take a three-pronged approach to answering the above question. Three major topics were studied:

1. An examination of BOD loading before and after the CWA (Chapter 2).
2. An examination of "worst-case" dissolved oxygen concentrations in water bodies below point sources before and after the CWA (Chapter 3).
3. Case study of the water quality in nine river basins (Chapters 4–13).

Regarding the first of these analyses (BOD), the authors conclude that there was "... a dramatic decline in effluent BOD loading from POTWs to the nation's waters". The reduction of BOD loading was achieved in spite of population increases.

Regarding dissolved oxygen concentrations, they found significantly improved levels in 8 of the 11 major river basins studied.

The remaining chapters are devoted to nine case study assessments of water quality in major river basins. In these studies, the authors attempted to answer these typical questions: "What are population trends? Are point or nonpoint sources the largest component of pollutant loading? What have been the long-term trends in effluent loading from municipal and industrial sources over the past 25–50 years? Has industrial wastewater loading declined because obsolete manufacturing facilities have been abandoned? What have been the long-term trends in key water quality parameters over the past 25–50 years? Have reductions in wastewater loads had impact on biological resources or recreational activities?"

Data from nine major river basins are examined. These basins are: Connecticut River, Hudson-Raritan Estuary, Delaware Estuary, Potomac Estuary, James River Estuary, Upper Chattahoochee River, Ohio River, Upper Mississippi River, and the Willamette River.

Among the plethora of tables and graphs, the most important (in my estimation) were those plots of dissolved oxygen concentration averages. With rare exception, these plots

showed increases in dissolved oxygen (DO) concentrations in each basin. In most cases, these concentrations were above the critical DO level of 5 mg/l.

The final segment of this book is composed of eight extensive data files plus a glossary and an extremely detailed table of contents.

This is not a book one picks up and reads like a novel. It is a detailed, data-filled report of the nation's water quality and improvements therein. This report provides the answer to the question posed at the beginning: Did the Clean Water Act improve US water quality? The answer is, as stated initially, an unqualified, "Yes".

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Proceedings of the Twenty-Sixth Arctic and Marine Oilspill Program (AMOP) Technical Seminar (Including Proceedings of the Twentieth Technical Seminar on Chemical Spills and the Fifth Biotechnology Solutions for Spills)

Environment Canada, Emergencies Science and Technology Division, Ottawa, Canada, two volumes, 2003, 1115 pp.

This annual seminar is an outgrowth of Environment Canada's Technical Research and Development on oil and chemical spills cleanup. The conference initially focused on the Arctic, but in recent years only 20% of the papers presented deal with this area. However, the conference has maintained its truly technical perspective.

In addition to the papers presented at the seminar, these proceedings contain a list by author name of all the papers presented in the last 25 years; that list is 70 pages long. This list is a welcome addition to the proceedings. Although, it would have taken many more pages, an additional listing by topics would have been useful.

These proceedings contain 62 papers delivered in 12 sessions. In addition to a significant number of presentations by personnel from Environment Canada and its contractors, there were contributions from 11 other countries. Not surprisingly, papers dealing with oil spills dominate. There are, however, papers on chemical spills and a new, not unexpected, topic dealing with counter-terrorism.

The titles of the conference sessions are listed below. Each title is followed by the number of papers in that session in brackets:

- Physical and chemical properties and behaviour of spilled oil (12).
- Activity updates and contingency planning for detection, tracking and remote sensing (3).
- Biological effects of oil and hydrocarbons and oil biodegradation (4).
- Special session on counter-terrorism (5).
- Technical seminar on chemical spills (6).
- Containment and recovery (5).
- BIOSS (1).
- In situ burning and shoreline protection and cleanup (3).
- Oil spill treating agents (9).